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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/798,891

03/12/2004

Russell Smith

8618-USA

4903

31743

7590

08/07/2009

Georgia-Pacific LLC

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EXAMINER

CHRISS, JENNIFER A

ART UNIT

PAPER NUMBER

1794

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/798,891	<b>Applicant(s)</b> SMITH ET AL.	
	<b>Examiner</b> JENNIFER A. CHRISS	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 43-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

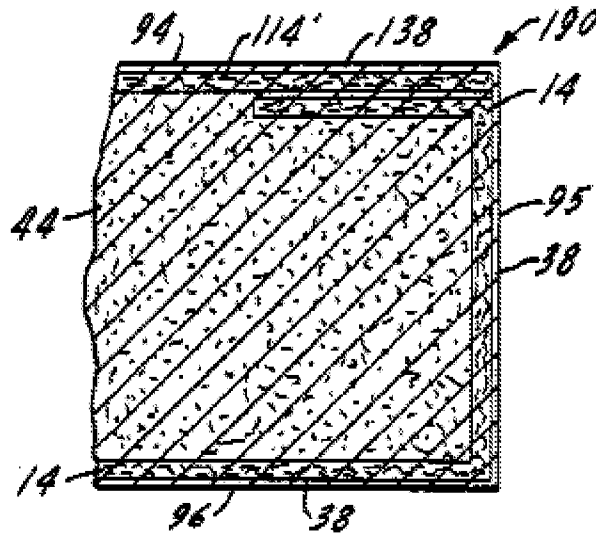
1. The Applicant's Amendments and Accompanying Remarks, filed April 22, 2009, have been entered and have been carefully considered. Claims 1 – 42 are cancelled, claims 49 – 50 are added and claims 43 – 50 are pending. In view of Applicant's statement of common ownership of Currier et al. (US 2005/0266225), the Examiner withdraws the rejections as detailed in paragraphs 3 – 6 and 13 of the previous Office Action. In view of Applicant's cancellation of claims 1 – 42, the Examiner withdraws the rejection as detailed in paragraphs 7 - 12 of the previous Office Action. The invention as currently claimed is not found to be patentable for reasons herein below.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

3. Claims 43 - 50 are rejected under 35 U.S.C. 103(a) as being obvious over Hauber et al. (US 6,524,679) in view of Bush et al. (US 2003/0134079 A1) and further in view of Schlachter (US 6,077,593).

Hauber et al. is directed to a glass reinforced gypsum board (Title).

As to claims 43, 46 and 49, Hauber et al. teach a multi-layer gypsum board as shown below (Figure 7).



As described by Hauber et al., the gypsum board has a denser gypsum slurry 38 coated on the edges of the gypsum board with the core gypsum slurry 44 being less dense (column 7, lines 40 – 69 and column 8, lines 1 – 65). The top-facing sheet 114 is comprised of a sheet or mat of randomly aligned glass fibers which is similar to the bottom facing sheet (column 10, lines 45 - 60). The bottom facing sheet comprises a mat of randomly aligned glass fibers having a diameter of 13 – 16 microns (column 7, lines 15 – 30). Hauber et al. teach that a polymer coating is applied to the glass fiber facing sheets 14 and 114' (column 20, lines 45 - 60) comprising an acrylic latex coating (column 21, lines 1 – 55) applied in a thickness ranging from about 0.5 mils to about 4.0 mils (column 22, lines 5 - 20). The coating may additionally comprise one or more rheology modifying compounds that assist the coating in striking into the front face slurry surface layer (column 22, lines 3 - 15). The polymer is in solution with water and can be in the range of from about 1 to about 99% solution (column 21, lines 55 - 65).

Hauber et al. teach the claimed invention above but fail to teach that the first

coating and the second coating penetrating the first and the second fiber mats penetrate at a depth of about 30 percent to about 50 percent of the thickness of the fiber mat as required by claims 43, 46 and 49.

Bush et al. is directed to a coated glass mat suitable for use as a facer in a gypsum board (page 3, [0035]). Bush et al. teach a coated glass mat where the coating penetrates deeply into the thickness of the mat from approximately 25% up to 75% of the mat thickness. Bush specifically indicates that the coating of the mat within this range affords higher tensile strengths. (page 3, [0035]). Bush et al. indicate that the coated glass mats can be used as facers on both sides of the gypsum core (page 8, [0076]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the glass facer sheets of Hauber et al. with a coating having a penetration of 25% up to 75% of the mat thickness motivated by the desire to create a gypsum board with improved tensile strength.

Hauber et al. in view of Bush et al. fail to teach that the coating has a mineral pigment, where the pigment has a particle size such that at least about 95% by weight of the mineral pigment particles pass through a 100 mesh wire screen, with about 75% of the particles by number being greater than 5 microns as required by claims 43 and 46, the mineral pigment has a particle size such that about 75% of the particles by number being greater than 5 microns as required by claim 49 and that the mineral

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pigment has a number average particle size of about 40 microns as required by claims 45, 48 and 50.

Schlachter is directed to a ceiling board having a coating of a latex composition comprising a latex binder and filler particles (Abstract). The larger size filler particles have a preferred median particle size range from about 45 to about 75 microns in order to provide the best ease of application, scratch resistance and gloss retention (column 3, lines 5 – 20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the particles of Schlachter having an average particle size of about 45 microns for use as mineral pigment in the coating of Hauber et al. in view of Bush et al. motivated by the desire to create a gypsum board having a coating which exhibits scratch resistance and gloss retention while maintaining having a pleasing aesthetic provided by the pigment.

As to claim 46, Hauber et al. in view of Bush et al. and Schlachter fail to teach that the glass fibers of the fiber mats have a length of about one-quarter inch to about 1 inch and the basis weight of the first mat is 1 to 3 pounds per 100 square feet. It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the fiber length and basis weight of the mat since it has been held that, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220

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F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). The burden is upon the Applicant to demonstrate that the claimed fiber length and basis weight are critical and has unexpected results. In the present invention, one would have been motivated to optimize the fiber length and basis weight motivated by the desire to create a gypsum board having the desired strength and porosity while being lightweight.

As to claims 44 and 47, Hauber et al. in view of Bush et al. and Schlachter disclose the claimed invention except for that that second portion is 18 – 20% more dense than the first portion. It should be noted that the relative density of the first and second portions are result effective variables. Hauber et al. note that the denser gypsum mixture is provided on the front, back and lateral end surfaces to provide structure strength and a lighter, lower density core provides an overall reduction in weight of the board. Additionally, production and delivery costs are reduced, handling at the construction site is easier and provides the ability to form the edges of the gypsum board without cutting thus eliminating exposed glass fibers and further strengthening the structural integrity of the final gypsum board segments (column 20, lines 1 - 18). It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a gypsum board where the second portion is 18 – 20% more dense than the first portion since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to

optimize the relative densities of the first and second portions to create a relatively lightweight gypsum board with increased structural strength along the edges.

### ***Response to Arguments***

4. Applicant's arguments filed regarding the rejection of claims 43 - 48 under 35 U.S.C. 103(a) as being obvious over Hauber et al. (US 6,524,679) in view of Bush et al. (US 2003/0134079 A1) and further in view of Schlachter (US 6,077,593) have been fully considered but they are not persuasive.

5. Applicant argues that the combination of Hauber with Bush and Schlachter fail to establish a prima facie case of obviousness. Applicant argues that Hauber appears to be suggesting the importance of gypsum slurry penetrating completely through the mat and refers to various sections of Hauber. Applicant argues that a person of ordinary skill in the art would have to disregard the entire teachings and advantages of Hauber and make a gypsum board by a completely different process in order to use the glass mats taught by Hauber with Bush. The Examiner submits that one must look at the prior art as a whole, in particular, the suggestions of any improvements in technology. Although Hauber desires a certain level of penetration, Bush et al. specifically sets forth motivation to vary the penetration thickness from 25% to up to 75% of the thickness in order to afford higher tensile strengths (see Bush, page 3, [0035]). The Examiner submits that Bush et al. provides sufficient motivation and thus the rejection is maintained.



***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER A. CHRISS whose telephone number is (571)272-7783. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 6 p.m., first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer A Chriss/  
Primary Examiner, Art Unit 1794

/J. A. C./  
Primary Examiner, Art Unit 1794